bel canto

e.One™ series

VBS1

VIRTUAL BATTERY SUPPLY™

USER'S GUIDE

VBS1™

VIRTUAL BATTERY SUPPLY

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Important Safety Information

Explanation of symbols used in this manual or on the rear/underside of the apparatus:

This symbol is intended to alert the user to the presence of uninsulated dangerous voltages within the enclosure of sufficient magnitude to cause electric shock.

This symbol is intended to alert the user to the presence of important operation, maintenance and servicing information in the instruction and service manuals.

CAUTION

- To reduce the risks of electric shock, do not remove the cover.
- No user serviceable parts inside.
- Refer servicing to qualified service personnel.
- Replace the mains fuse in the plug with one of the same type and rating.
- Disconnect supply cord before changing fuse.

WARNING

To reduce the risks of fire or electric shock, do not open chassis or expose this apparatus to water or moisture.

Safety Instructions

- Read, keep and follow these instructions.
- Heed all warnings.
- Do not use the apparatus near water, ie near a bathtub, kitchen sink, laundry tub, in a wet basement, near a swimming pool etc.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the Manufacturer's instructions. Site the apparatus so that its location or position does not interfere with its proper ventilation. For example, the apparatus should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet; consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and at the point where they exit from the apparatus.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug has been damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Mains plug: Use the mains plug to disconnect the apparatus from the mains supply. The mains plug must be accessible at all times. Use the mains switch (if applicable) when the apparatus is not in use.
- Objects and liquid entry: Do not let objects or liquids fall into the apparatus. Do not expose the apparatus to dripping or splashing. Do not place a vessel containing liquid on top of the apparatus.
- No naked flame sources, such as lighted candles, should be placed on the apparatus.
- The apparatus has been designed for use in moderate and tropical climates

In The U.K.

Fuse replacement:

This appliance is fitted with a non-rewireable 10 amp mains plug. The plug contains a 10 amp fuse. If the fuse has blown it can be replaced as follows:
a) Pull out the black fuse cover/carrier.
b) Remove and dispose of the blown fuse.
c) Fit a new 10 amp BS1362 approved fuse into the carrier and push the carrier back into the plug.

Always ensure the fuse cover is fitted. If the fuse cover is missing do not use the plug. Contact your Bel Canto retailer to obtain a replacement fuse cover. Fuses are for fire protection and do not protect against electric shock.

WARNING: THIS APPLIANCE MUST BE GROUNDED.

CE DECLARATION

Bel Canto Design Ltd. declare that this product is in conformance with the Low Voltage Directive 73/23/EEC and Electromagnetic Compatibility 89/336/EEC as amended by 92/31/EEC and 93/68/EEC.

The conformity of the designated product with the provisions of Directive number 73/23/EEC (LVD) is proved by full compliance with the following standards:

EN60065 2002 General requirements

The conformity of the designated product with the provisions of Directive number 89/336/EEC (EMC) is proved by full compliance with the following standards:

EN55013 2001 Conducted emissions
EN55013 2001 Absorbed emissions
EN55020 2002 Immunity

The conformity of the designated product with the provisions of Directive number 2005/32/EC ecodesign requirements is proved by full compliance with the 'off mode' setting power of 0.0 Watts.

FCC NOTICE

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Green By Design

All Bel Canto products make use of compact and efficient design principles. Our products use less resources per unit to produce better performance than ever before. Everything from reduced packaging volume, to less weight in transport helps to reduce the overall environmental impact of bringing our products into the market.

Our products make very efficient use of electricity. Low energy usage and compact size ensure that the physical and environmental footprints of all Bel Canto products are minimized. Quality and performance play into this approach as all of our products are designed to remain vital and valid performers for many years. Should you want to upgrade to one of our new products, we even offer trade-in value for your old Bel Canto product to ensure that it is recycled in the most efficient and responsible manner.

RoHS and WEEE

All of our current products are designed and produced to RoHS standards, ensuring that dangerous materials do not enter the waste stream. Lead free electronics assemblies and environmentally safe finishing and production methods are utilized to ensure that our products and processes are environmentally safe.

Bel Canto Recycles

Bel Canto has always been a forward thinking company. In the same way that we are focused on the development of high-end audio products, we are also conscious of what we leave behind. For many years we have implemented environmentally sound measures to make the most efficient use of resources and keep our impact at a minimum.

We reuse or recycle more than 99% of the packing materials for our incoming parts shipments. Each year we divert massive amounts of cardboard, paper, plastic film, and Styrofoam from landfills. Our plastic and Styrofoam is delivered directly to local facilities that process it on site for use in their manufacturing. Steel, aluminum, and other metal waste products are delivered to local metal scrap yards for recycling back into the production stream.

We also participate in Waste Management's e-Cycling program. All electronic waste is processed in the US, with hazardous material being separated from non-hazardous, at ISO 9001 and ISO 14001 certified regional processing centers.

Our commitment to responsible production processes ensures that the absolute minimum of material used in the making of our products enters the waste stream.

Warranty Information

Please take a moment to fill out your warranty registration sheet. Returning this registration validates your warranty. This information will not be sold or released outside Bel Canto. Your comments and suggestions help us to continually improve our products and services.

Bel Canto products are automatically covered by a 90 day factory warranty which covers all internal parts and labor. You have the option to extend your warranty to **2 years** by completing and returning the enclosed warranty registration form within 30 days of purchase. You will need to include a copy of the original sales receipt from an authorized Bel Canto dealer. Completion of warranty registration will ensure prompt warranty coverage. The warranty is only valid to the original owner and is non-transferable. Damage caused by unauthorized modification, abuse, or neglect of product will void your warranty. Any cost associated with return of product is the sole responsibility of the owner.

Bel Canto products are uniquely identified with a serial number on the back panel of each unit. This number is required to validate your warranty. Please reference the serial number if service is required. If you have any questions, please feel free to contact us Monday through Friday 9:00 am – 5:00 pm CST.

Unpacking Your VBS1

VBS1 packaging contains the following contents:

1 (one) – VBS1
1 (one) – VBS1 User's Guide
1 (one) – Power cord [6.6' – 2 meters long]
1 (one) – Warranty Sheet (North America only)

Carefully unpack each piece and check for shipping damage. If there is any damage, or if anything is missing, please contact your dealer, distributor or Bel Canto Design.

IMPORTANT!
Save all packing materials! They are custom designed to protect the unit during transportation or shipping. If the packing becomes lost or damaged, please contact your dealer or Bel Canto before attempting to transport your unit.

Power Connection

The power supply on the VBS1 is preset for the proper power voltage. The power cable should have the correct plug for your local power system. If you believe this to not be true, please contact your dealer immediately.

This product, like any electrical component, can be dangerous and cause injury unless correct handling procedures are observed and used. Before powering this product, it is necessary to read and follow proper setup and procedures.

WARNING!
Do not connect power to this product yet!

Setup & Placement

Because the VBS1 runs cool, it can be placed in many system locations without compromise. We do not recommend placing weights or other objects directly on the VBS1. This may scratch or mar the chassis finish. Do not use harsh chemicals when cleaning the outside of your VBS1.

IMPORTANT!
Make all connections before powering your unit!

Design Features

Offering low noise, high transient current and a high degree of isolation from the AC Line supply, the VBS1 is the ideal power source for sensitive audio electronics. Combining low noise switching technology, multiple stages of isolation, filtration and regulation, the VBS1 provides a highly stable, isolated and low noise base for precision digital and analog audio circuitry. The VBS1 is designed to provide the ideal power source for up to 3 VB equipped products (DAC3VB, PRe3VB, CD2, Phono3VB, etc).

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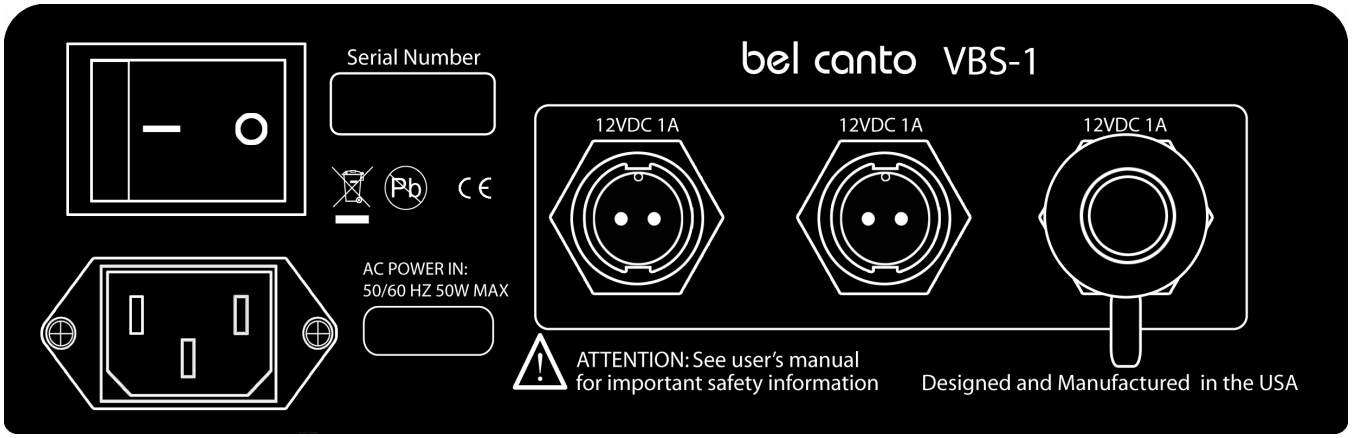
VBS1 Features:

- Low Noise Switch Mode Power Supply (SMPS) provides over 90% energy efficiency, specific control over operating parameters of the supply, and high levels of isolation with significantly lower audio band noise than traditional 50/60 Hertz transformer based linear supplies
- Extensive input filtration, low noise rectification and high energy storage prior to the SMPS
- Massive bank of LC filtration using compound inductors, parallel electrolytic capacitors and final stage polypropylene capacitors to ensure hundreds of amperes of peak current capability and low noise across a wide frequency spectrum
- ½ of a Farad of total capacitance (500,000 microfarads) and over 100 Joules of energy storage
- 10X to 100X lower noise floor than traditional linear power supply
- Provides over 100 dB of isolation starting below 100 Hz
- Compact SMPS isolation transformer for superior isolation from the power line

Rear Panel Connections



- On the lower left corner of the VBS1 back panel is the AC inlet jack. Connect this jack to an AC power outlet in your home using the included AC power cord. Make sure the AC power outlets in your home have properly functioning grounding. DO NOT use any ground lift adapter plug or ground defeating apparatus at any time. DO NOT remove the grounding prong of the power cable at any time. Improper grounding of the VBS1 could cause the unit to malfunction, and can result in serious bodily injury or even death.

- The center right side of the VBS1 back panel has three 12 volt DC output receptacles. Use the Bel Canto supplied power interconnects to mate the VBS1 output receptacles to your VB equipped components. (Make sure all units are powered OFF while making connections.)

- Be sure that the power switch is in the off (O) position before making any connections. On the upper left corner of the VBS1 back panel is the AC power switch. To power the unit ON, flip the switch toward the outside of the unit so that the side of the switch with the flat line is depressed

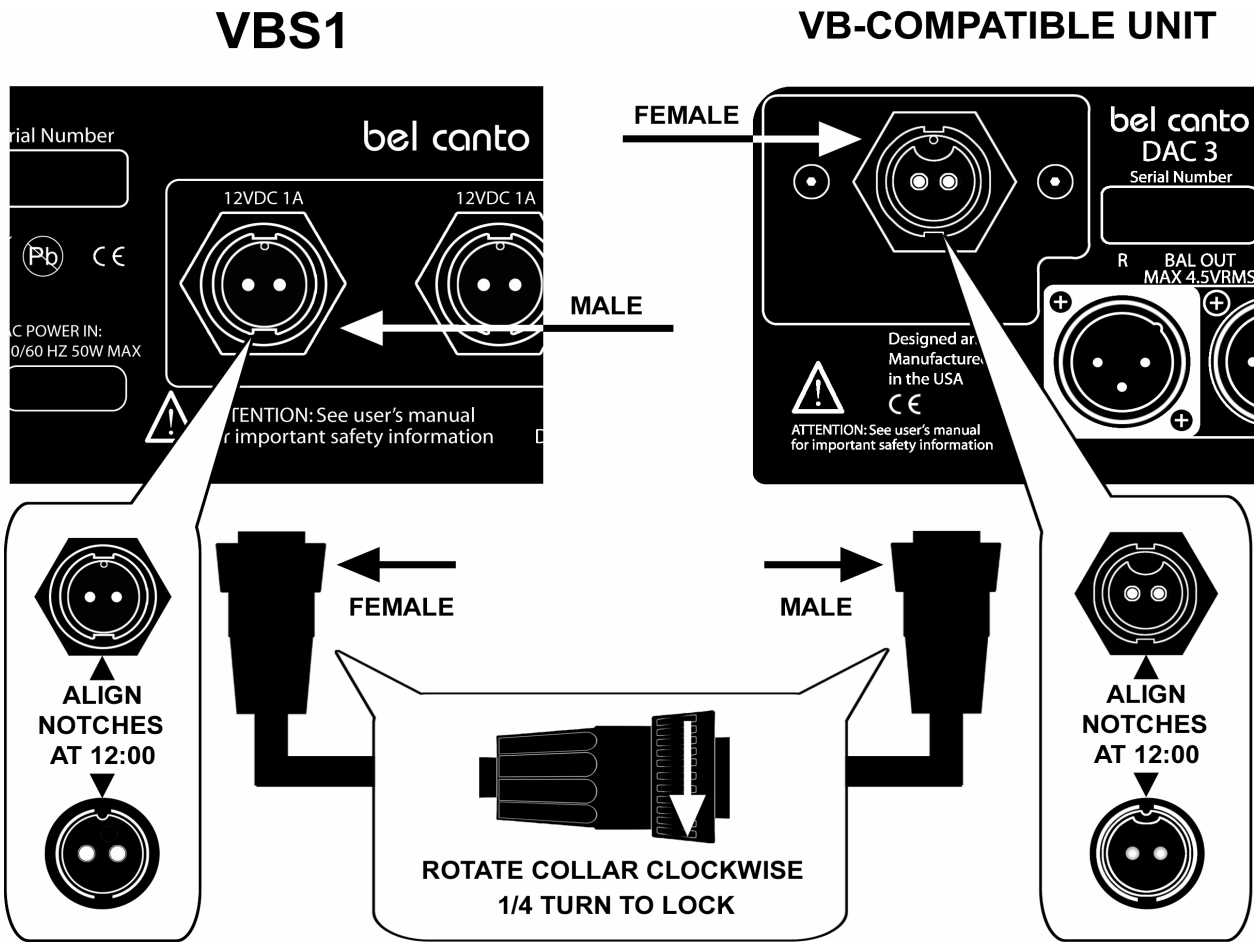
- Note that it will take the supply 3-5 seconds to fully charge up the internal storage capacitors when turning the VBS1 on. When shutting the VBS1 off wait for 1-2 minutes before removing the power cables to the e.One products to ensure that the VBS1 is fully discharged. Check that the blue LED indicator lamp is not lit before removing the VBS1 cables.

Specifications

Low Noise DC power source for use with up to 3 e.One VBS1 compatible source or control components

Maximum power dissipation:	50 watts
Typical power dissipation:	<20 watts driving 3 devices
Internally Set Operating Voltages:	100-120 VAC 50/60 Hz or 200-240VAC 50/60 Hz
Dimensions:	8.5” W x 12.5” D x 3” H (216 mm x 318 mm x 75 mm)
Weight:	15 Pounds, 7 Kilograms

Tips For Operation



- The VBS1 is designed to power Bel Canto VB equipped products only. Use of any cable other than the supplied power interconnect may damage either the VBS1 or VB equipped unit and will void any warranty. Certain non-VB equipped units can be factory upgraded. To begin the upgrade process, fill out the RMA form in the Support Section of our website.

- When connecting your VB unit to the VBS1, be careful to observe the alignment notches on both units power receptacles and the power interconnect cable.

- When inserting the power interconnect cable, align the notch on the cable end and the alignment teeth on the outer sleeve to the 12 o'clock position. This will allow the interconnect cable to fully seat and ensure that the plug mates correctly with the power receptacle.

- Once the power interconnect cable is fully seated in the receptacle, lock in the power interconnect cable by turning the outer sleeve clockwise one quarter turn. Proper seating of the VBS1 cable will ensure safe and secure operation of the VBS1 and all connected components.

- The VBS1 has been designed to run on non-regulated, non-filtered AC Mains. Usage of any additional isolation or filtration from the AC Mains supply may compromise VBS1 performance.

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